

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 17-26 are presented for consideration in lieu of claims 1-6, 9-12 and 14-16, which have been canceled without prejudice or disclaimer. Claims 17 and 25 are independent. Support for these claims can be found in the original application, as filed. For example, the Examiner's attention is directed to Figure 2A and Figure 3C, and the corresponding discussion in the subject disclosure. Therefore, no new matter has been added.

Applicant requests favorable reconsideration and withdrawal of the rejection set forth in the above-noted Office Action.

Claims 1-6, 9-12, and 14-16 were rejected under 35 U.S.C. § 112, first and second paragraphs. Claims 1-6, 9-12 and 14-16 having been canceled, these rejections have become moot and should be withdrawn. Such favorable indication is requested. Nevertheless, the Examiner's comments were taken into consideration when presenting claims 17-26.

Turning now to the art rejections, claims 1, 2, 4, 5, 14 and 15 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,382,935 to Mikiya et al. Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Mikiya et al. patent in view of U.S. Patent No. 4,774,428 to Konecny. Claims 9-12 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Mikiya et al. patent in view of U.S. Patent No. 6,069,417 to Yuan et al. Applicant submits that the cited art, whether taken individually or in combination, does not teach or suggest many features of the present invention, as previously recited in claims

1-6, 9-12 and 14-16. Therefore, these rejections are respectfully traversed. Nevertheless, Applicant submits that independent claims 17 and 25, as presented, for example, amplify the distinctions between the present invention and the cited art.

In one aspect of the present invention, independent claim 17 recites a positioning apparatus including a movable member, a first pair of electromagnets configured to sandwich the movable member and each to generate suction power having an inverse direction between the movable member and each electromagnet of the first pair of electromagnets, and a second pair of electromagnets configured to sandwich the movable member and each to generate suction power having an inverse direction between the movable member and each electromagnet of the second pair of electromagnets. The first and second pairs of electromagnets are controlled to generate a driving force in a same direction in order to drive the movable member, and the first pair of electromagnets is controlled to reduce generation of a leakage flux from the second pair of electromagnets.

In another aspect of the present invention, independent claim 25 recites a charged-particle beam exposure apparatus including a charged-particle source for irradiating a charged-particle beam, a first electron optical system, having a plurality of electron lenses, for forming a plurality of intermediate images of the charged-particle source by the plurality of electron lenses, a second electron optical system for projecting the plurality of intermediate images, formed by the first electron optical system, onto a substrate, and a positioning apparatus, holding the substrate, for positioning a stage. The positioning apparatus includes (i) a movable member configured to move the substrate, (ii) a first pair of electromagnets configured to sandwich the movable

member and each to generate suction power having an inverse direction between the movable member and each electromagnet of the first pair of electromagnets, and (iii) a second pair of electromagnets configured to sandwich the movable member and each to generate suction power having an inverse direction between the movable member and each electromagnet of the second pair of electromagnets. The first and second pairs of electromagnets are controlled to generate a driving force in a same direction in order to drive the movable member, and the first pair of electromagnets is controlled to reduce generation of leakage flux from the second pair of electromagnets.

Applicant submits that the cited art does not teach or suggest such features of the present invention, as recited in independent claims 17 and 25.

The Examiner relies on the Mikiya et al. patent for teaching an exposure apparatus that includes a movable member movable in a first direction and an electromagnet unit 181 configured and positioned to drive the movable member in the first direction, the electromagnet unit including first and second electromagnets. Applicant notes that the first electromagnet (190, 181a) and the second electromagnet (191, 181c) are shown in Figures 3A and 3B of the Mikiya et al. patent. Alternating current is applied to the first and second electromagnets. Applicant submits, however, that the configuration taught in the Mikiya et al. patent is unable to generate suction power having an inverse direction and is unable to reduce generation of leakage flux, in the manner of the present invention recited in independent claims 17 and 25. Applicant submits, therefore, that the Mikiya et al. patent does not teach or suggest at least the arrangement of the first pair of electromagnets and the second pair of electromagnets of the present invention, as

recited in those independent claims. Accordingly, that patent does not teach or suggest salient features of Applicant's present and should not be read to anticipate Applicant's invention recited in the independent claims.

Applicant further submits that the remaining art cited does not cure the deficiencies noted above with respect to the Mikiya et al. patent.

The Konecny patent shows a coil provided to generate different polarities and the Yuan et al. patent to shows a plurality of electromagnet units, having a first electromagnet and a second electromagnet, for driving a stage in X-axis, Y-axis and Z-axis directions, and a rotational direction around respective axes, and a carriage stage 30 for carrying an apparatus on an X-Y plane. Applicant submits, however, that the Konecny patent and the Yuan et al. patent, as with the Mikiya et al. patent, do not teach or suggest the salient features of Applicant's present invention, as recited in the independent claims, which have been discussed above. Therefore, those patents add nothing to the teachings of the Mikiya et al. patent that would render obvious Applicant's present invention, as recited in independent claims 17 and 25.

For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 17 and 25, is patentably defined over the cited art.

Dependent claims 18-24 and 26 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicant further submits that this Amendment After Final Rejection places this application in condition for allowance. This Amendment was not earlier presented because Applicant believed that the prior Amendment placed the application in condition for allowance. Accordingly, entry of the instant Amendment, as an earnest attempt to advance prosecution and reduce the number of issues, is requested under 37 CFR 1.116.

Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are also requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010 All correspondence should continue to be directed to our address given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steven E. Warner", is written over a horizontal line.

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